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10/066,516	01/30/2002	Herbert F. Cattell	10010010-1	3692

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AGILENT TECHNOLOGIES, INC.
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EXAMINER

NEGIN, RUSSELL SCOTT

ART UNIT	PAPER NUMBER
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1631

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/066,516	Applicant(s) CATTELL, HERBERT F.	
	Examiner Russell S. Negin	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 22-28 and 36-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 22-27 and 36-38 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Comments

Applicants' amendments and request for reconsideration in the communication filed on 23 August 2007 are acknowledged and the amendments are entered.

Claims 1-11, 22-28 and 36-38 are pending and examined in the current Office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following rejection is reiterated from the Office action of 30 May 2007:

Claims 1, 3-4 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Cattell et al. [International Genome Sequencing and Analysis Conference, volume 12, page 106, 2000] in light of the definition of "pipeline" [obtained online at www.geek.com on 21 May 2007].

Claim 1 is drawn to a method for simultaneous acquisition and analysis of separate microarray sets of data comprising three steps. The first step is reading a first chemical array. The second step is saving the array signal data. The third step is retrieving the saved signal data from the memory, wherein the feature characteristics

Art Unit: 1631

are extracted from the signal data while a second chemical array is being read at said array reading station.

The abstract of Cattell et al. states:

The analysis of microarrays has historically been an interactive task requiring the use to manually scan and feature extract each array individually. Typical points of user interaction include defining the scan area, aligning a grid to enable the feature finding process, flagging anomalous features and/or regions within the array, and the management of various files including design or layout files, scan files and results files. We designed an automated feature extraction system around our low detection limit, dual fluorescent scanner with autoloading capacity. This approach allows the user to load a carousel with arrays and 'walkaway' from the system, which is left to scan and feature extract unattended in a pipelined fashion. The user returns later to find all arrays scanned, extracted and processed, and ready for further analysis. Through the use of fiducials and barcodes, which together define the scan area and locate the array of the scanned image, our system simplifies image processing and eliminates file management issues. Automated methods in the feature extractor replace the remaining interactive steps such as feature finding and flagging of outlier features. The processed results include normalized signals, gene expression ratios, and associated errors and p-values that can be used in downstream analysis.

The method of Cattell et al. discloses reading and extracting data from multiple arrays in a pipelined fashion in an automated system. Cattell et al. suggest use of bar codes as array identifiers.

While Cattell et al. do not explicitly recite the simultaneity of the reading and extracting data, they do mention the reading and extracting is accomplished in a "pipelined" fashion. It is inherent that the term "pipeline" signifies this simultaneity in execution of the reading and extraction of data in the microarrays based on the following definition for "pipeline."

As is stated in the definition of "pipeline" [obtained online at www.geek.com on 21 May 2007]:

Pipeline: The technique of processing multiple parts of an instruction at the same time. Many processors have two or more instruction pipelines—think of them as automobile assembly lines. As one instruction is executes, the next instruction if being decoded, and the one after that is being fetched from memory.

Consequently, it is inherent that pipelining means the simultaneous execution of tasks.

Claim 3 is dependent from claim 1 with the additional limitation of retrieving the saved signal data from the memory as the processor becomes available to perform feature extraction on the retrieved signal data for the chemical array, and extracts feature characteristics from the retrieved signal data.

Claim 4 is dependent from claim 3, with the extra limitation wherein multiple arrays are read and features are extracted therefrom.

The limitation is taught by the abstract of Cattell et al., which extracts features from arrays (plural) in a pipelined fashion.

Claim 11 is dependent from claim 1 with the extra limitation of saving a processor identification or feature extraction characteristic in a memory. The abstract of Cattell et al. describes the use of fiducials and barcodes for processor identification.

It is noted that Cattell et al. is a presentation at the International Genome Sequencing and Analysis Conference as a poster in 2000. The Office has been unable to obtain a copy of this poster. In the Office action of 30 May 2007, applicant was requested to provide a copy of this poster, which has not been received yet by the

Office. Applicant is strongly requested to provide a copy if this poster is available. If a formal requirement under 37 CFR 1.105 is desired, it would be used subsequently.

Response to Arguments:

Applicant's arguments filed 23 August 2007 have been fully considered but they are not persuasive.

Applicant first states on page 6 of the Remarks:

The Applicants and the Examiner both agree that the Cattell abstract does not explicitly mention a scanner system that extracts data obtained from a first array while a second array is being read. As best understood by the Applicants, the Examiner's position hinges on the interpretation of the word "pipelined" in the Cattell abstract...

Applicant continues on the bottom of page 6 of the Remarks by stating that the meaning of the verb "pipelined" in this instance is "sequential" processing and not "parallel" or "simultaneous" processing.

This argument is not found to be persuasive because absent a definition of "pipeline" in the specification, the term "pipeline" can be interpreted broadly as to encompass parallel processing. Consequently, while it is agreed that the Cattell et al. abstract does not explicitly teach simultaneous processing, the reference of Cattell et al. inherently teaches this simultaneity in data processing.

Applicant next argues that the definition of the verb "pipeline" from www.geek.com is both informal and obtained seven years after the filing date of the

Art Unit: 1631

application. Again, absent a definition from the initial disclosure, the definition of "pipeline" can be interpreted broadly to encompass this alleged informal definition.

Applicant argues on page 7 of the Remarks:

In this case, we believe that the examiner has erred in that he has not provided any evidence that the geek.com definition from May 27, 2007, bears any relation to the meaning of "pipelined" in the Cattell abstract, which is dated over six years earlier (September 12, 2000). It is not even clear to the Applicants if the www.geek.com website actually existed in September, 2000, whether the definition cited by the Examiner was available if it did exist at that time, or whether the definition is indeed reliable.

This argument is not persuasive for several reasons.

First, applicant has alleged that there is no relation between the geek.com definition and that of the instant application. In the absence of both an explanation of why there is no relation and an explicit definition of the verb "pipeline" in the original disclosure, the geek.com definition is interpreted to be a valid definition for the purposes of examination.

Second, in response to the applicant's allegations that definitions used to show the meanings of terms in a prior art reference should antedate this prior art reference, the definition of the verb "pipeline" is intended to illustrate inherent properties of this verb in the Cattell et al. abstract. Section 2112 (II) of the MPEP explicitly states, "Inherent feature need not be recognized at the time of the invention." Therefore, the definition used to show the inherent properties of the verb pipeline need not antedate the reference used to anticipate this set of rejected claims.

Applicant next argues on page 7 of the Remarks:

The Applicants finally note that a closer inspection the www.geek.com definition reveals that the pipelining only occurs in processors that have "two or more instruction pipelines". The Cattell abstract is silent on whether the processor used in Cattell's system contained a single instruction pipeline or more than one instruction pipeline.

This is not found to be persuasive because this statement is taken out of context and is not accurate. The definition states:

Many processors have two or more instruction pipelines...

Consequently, this definition of the verb "pipeline" does not exclusively limit all of the processors to have two or more instructional pipelines; there may be some processors with a single instructional pipeline.

Claim Rejections - 35 USC § 103

The rejections of claims 13, 16, and 18 under 35 U.S.C. 103(a) as being unpatentable over Harris et al. in view of Rava et al. in view of Ambrose et al. are withdrawn in view of amendments made by applicants to the set of claims on 23 August 2007.

The rejections of claims 14-15, 17, and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Harris et al. in view of Rava et al. in view of Ambrose et al. as applied to claims 13, 16, and 18 above, in further view of Besemer et al. are withdrawn in view of amendments made by applicants to the set of claims on 23 August 2007.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1631

The following rejection is reiterated from the Office action of 30 May 2007:

35 U.S.C. 103 Rejection #1:

Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cattell et al. as applied to claims 1, 3-4, and 11 above in further view of Kallioniemi et al. [US PG PUB 2003/0215936 A1].

Claim 36 is dependent from claim 1 further comprising forwarding data representing the result of said reading and extracting. Claim 37 is dependent from claim 36 with the additional limitation of communication to a remote location.

Claim 38 teaches a method comprising receiving data and is interpreted to mean any type of data that could be made by the method of claim 1.

Cattell et al. as applied to claims 1, 3-4, and 11 above fails to show the forwarding and reception of data and the use of remote computers.

Kallioniemi et al. teaches a method and apparatus for a high-throughput, large scale molecular profiling of tissue specimens through analysis of arrays of donor data.

Kallioniemi et al. uses the Internet in combination with communication channels to disseminate array information to remote locations. As is stated in paragraph [0083]:

A "communication channel" or "network" is a system, such as the Internet, which permits digital dissemination of digital information, such as digital images and test associated with the images.

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice the multiple array reading method of Cattell et al. as applied to claims 1, 3-4 and 11 above in view of the remote analysis method of

Art Unit: 1631

Kallioniemi et al. because the application of the use of the Internet to the arrays of Cattell et al. would have allowed a more thorough access and reception of array information.

Response to Arguments:

Applicant's arguments filed 30 May 2007 have been fully considered but they are not persuasive. Applicant relies on alleged deficiencies of the abstract of Cattell et al. to argue against this rejection. Since the reference of Cattell et al. is not deficient for the reasons discussed above, this rejection is valid.

35 U.S.C. 103 Rejection #2:

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cattell et al. as applied to claims 1, 3-4, and 11 above, and further in view of Besemer et al.

Claim 5 depends from claim 1 with the extra limitation of reading an array identifier in a memory.

Claim 6 depends from claim 5 with the extra limitation of having the ability of retrieving the identifier from the memory.

Claim 7 depends from claim 6 with the extra limitation of extracting feature characteristics of the first array by retrieving feature characteristics corresponding to the identifier.

Claim 8 depends from claim 5 with the extra limitation of having the identifier on the substrate.

Claim 9 depends from claim 7 with the extra limitation of having a sample processing station.

While Cattell et al. as applied to claims 1, 3-4, and 11 above describe processing multiple arrays, they do not go into detail about array labeling and identification.

Besemer et al. describes putting bar codes on the arrays for identification purposes. As stated in the last sentence of their abstract, "The housing also includes a bar code." The set of claims emphasizes computational analysis of these bar codes, as stated in column 23, lines 20-27:

A package for hybridization, comprising... a housing including a fluid cavity constructed and arranged for hybridization of a target to a probe of said probe array located inside a fluid cavity, said housing including a bar code and being arranged for use with a detection system.

Column 23, lines 55-61 state:

A package for supporting a probe array, comprising: an optically transparent chip comprising an array of different probes including biological polymers, immobilized on a surface of said chip; a housing constructed to receive said chip; and a bar code associated with said chip.

Consequently, Besemer et al. shows array identifiers on substrates in sample processing stations, the ability to receive the bar code from the chip, and the ability to receive array information from the bar codes.

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice Cattell et al. as applied to claims 1, 3-4, and 11 above, in further view of Besemer et al. because while Cattell et al. states the necessary use of bar codes for identification, Besemer et al. goes into detail behind the use of bar codes for array identification and further advances the efficiency of microarray analysis.

Response to Arguments:

Applicant's arguments filed 30 May 2007 have been fully considered but they are not persuasive. Applicant relies on alleged deficiencies of the abstract of Cattell et al. to argue against this rejection. Since the reference of Cattell et al. is not deficient for the reasons discussed above, this rejection is valid.

35 U.S.C. 103 Rejection #3:

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cattell et al. as applied to claims 1, 3-4, and 11 above, and further in view of Ambrose et al.

Claim 22 is drawn to an apparatus for multiple array reading using multiple processors comprising a memory, multiple processors, and the simultaneous retrieving and acquisition of data.

Claim 23 is dependent from claim 22 with the extra limitation of a second processor automatically retrieving signal data for said first chemical array from the memory as the processor becomes available to perform feature characteristic extraction on the retrieved signal data for the chemical array, and extracts feature characteristics from the retrieved signal data.

While Cattell et al. describe processing multiple arrays, they do not go into detail about multiple processors.

The patent of Ambrose et al., entitled, "High throughput analysis of samples in flowing liquid," teaches such parallel processing. As stated in column 5, lines 43-47, "The corrected burst size distribution (BSD) in FIG 4A was obtained with 20 consecutive images using the conditions described in FIG 2 with a data acquisition time of 8.6 seconds. The data analysis time was ~1 minute per image. With highly parallel computing, this data time can be further reduced." Ambrose et al. continues on column 6, lines 52-57, "Another application for this technique is to characterize artificial chromosome clone libraries. Such libraries are widely used in gene mapping, DNA sequencing, and other types of genome analysis, and can consist of as many as hundreds of thousands of DNA clones in microtiter wells,..."

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice Cattell et al. as applied to claims 1, 3-4, and 11 above, in further view of Ambrose et al. because Ambrose et al. has the advantage of examining multiple processors for the purpose of more powerful, expedited analyses of microarrays.

Response to Arguments:

Applicant's arguments filed 30 May 2007 have been fully considered but they are not persuasive. Applicant relies on alleged deficiencies of the abstract of Cattell et al. to argue against this rejection. Since the reference of Cattell et al. is not deficient for the reasons discussed above, this rejection is valid.

Art Unit: 1631

35 U.S.C. 103 Rejection #4:

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cattell et al. as applied to claims 1, 3-4, and 11 above, and further in view of Rava et al.

Claim 10 is dependent from claim 1 with the extra limitation of multiple reading stations.

While Cattell et al. as applied to claims 1, 3-4, and 11 above describe processing multiple arrays, they do not go into detail about multiple reading stations.

The patent of Rava et al., entitled, "Methods for concurrently processing multiple biological chip assays," states as its abstract:

Methods for concurrently processing multiple biological chip assays by providing a biological chip plate comprising a plurality of test wells, each test well having a biological chip having a molecular probe array; introducing samples into the test wells; subjecting the biological chip plate to manipulation by a fluid handling device that automatically performs steps to carry out reactions between target molecules in the samples and probes; and subjecting the biological chip plate to a biological chip-plate reader that interrogates the probe arrays to detect reactions between target molecules and probes.

Figure 1 illustrates such a plate with multiple readers. Column 2, lines 7-9 state, "In a further embodiment of the invention, the method also includes processing the results of the assay with a computer."

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice Cattell et al. as applied to claims 1, 3-4, and 11 above, in further view of Rava et al. because Rava et al. has the advantage of examining multiple arrays for the purpose of more powerful, expedited analyses of microarrays.

Response to Arguments:

Applicant's arguments filed 30 May 2007 have been fully considered but they are not persuasive. Applicant relies on alleged deficiencies of the abstract of Cattell et al. to argue against this rejection. Since the reference of Cattell et al. is not deficient for the reasons discussed above, this rejection is valid.

35 U.S.C. 103 Rejection #5:

Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cattell et al. in view of Ambrose et al. as applied to claims 22-23 above, and further in view of Besemer et al.

Claim 24 is dependent from claim 22 with the extra limitation of having an array reader.

Claim 25 is dependent from claim 24 with the extra limitation of having a second processor with an array identifier.

Claim 26 is dependent from claim 25 with the extra limitation of having a third processor which communicates with a memory.

Claim 27 is dependent from claim 24 wherein the identifier reader reads associated array identifiers from an array substrate or a housing containing the array.

While Cattell et al. in view of Ambrose et al. describe processing multiple arrays using multiple processors, they do not go into detail about multiple array identifiers.

Besemer et al. describes putting bar codes on the arrays for identification purposes. As stated in the last sentence of their abstract, "The housing also includes a

Art Unit: 1631

bar code.” The set of claims emphasizes computational analysis of these bar codes, as stated in column 23, lines 20-27:

A package for hybridization, comprising... a housing including a fluid cavity constructed and arranged for hybridization of a target to a probe of said probe array located inside a fluid cavity, said housing including a bar code and being arranged for use with a detection system.

Column 23, lines 55-61 state:

A package for supporting a probe array, comprising: an optically transparent chip comprising an array of different probes including biological polymers, immobilized on a surface of said chip; a housing constructed to receive said chip; and a bar code associated with said chip.

Consequently, Besemer et al. shows array identifiers on substrates in sample processing stations, the ability to receive the bar code from the chip, and the ability to receive array information from the bar codes.

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice Cattell et al. as in view of Ambrose et al. applied to claims 22 and 23 above, in further view of Besemer et al. because Besemer et al. goes into detail behind the use of bar codes for array identification and further advances the efficiency of microarray analysis.

Response to Arguments:

Applicant's arguments filed 30 May 2007 have been fully considered but they are not persuasive. Applicant relies on alleged deficiencies of the abstract of Cattell et al. to argue against this rejection. Since the reference of Cattell et al. is not deficient for the reasons discussed above, this rejection is valid.

35 U.S.C. 103 Rejection #6:

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cattell et al. as applied to claims 1, 3-4, and 11 above, and further in view of Li et al. [US Patent 6,571,005].

Claim 2 is dependent from claim 1 with the extra limitation of containing polypeptide or polynucleotide arrays.

While Cattell et al. as applied to claims 1, 3-4, and 11 above describe processing multiple arrays, they do not teach use of polypeptide or polynucleotide arrays.

As the title of the patent of Li et al., states, "Feature extraction and normalization algorithms for high-density oligonucleotide gene expression array data," the objective of this invention is to normalize and extract feature data from oligonucleotide microarrays.

The purpose of Li et al. states in column 1, lines 17-21:

Monitoring gene expression using high-density microarrays is a technique in the study of cell functions and the associated biochemical pathways, candidate gene identification, cellular response to drug compounds, and classification of disease states.

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice Cattell et al. as applied to claims 1, 3-4, and 11 above, in further view of Li et al. because Li et al. has the advantage of examining multiple arrays with oligonucleotides for the purpose of normalization and feature extraction in order to address disease.

Response to Arguments:

Applicant's arguments filed 30 May 2007 have been fully considered but they are not persuasive. Applicant relies on alleged deficiencies of the abstract of Cattell et al. to

argue against this rejection. Since the reference of Cattell et al. is not deficient for the reasons discussed above, this rejection is valid.

Claim Objections

Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the central PTO Fax Center. The faxing of such pages must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61


Art Unit: 1631

(November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)).
The Central PTO Fax Center Number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Negin, Ph.D., whose telephone number is (571) 272-1083. The examiner can normally be reached on Monday-Friday from 7am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Marjorie Moran, Supervisory Patent Examiner, can be reached at (571) 272-0720.

Information regarding the status of the application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information on the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 10/17/07
RSN
17 October 2007

/Shubo (Joe) Zhou/

SHUBO (JOE) ZHOU, PH.D.
PRIMARY EXAMINER